

REMARKS

The Office Action mailed September 29, 2004 and references cited therein have been reviewed. Applicant amended claims 1, 16, 17, 21, 40, 41, 44, 60 and 61.

The Examiner apparently conducted a new search after Applicant spent the time and expense of preparing and filing an appeal brief to the Final Office Action mailed May 21, 2004. Applicant submits that the newly cited prior art does not support a rejection of any of the pending claims.

I. THE FIRST REJECTION

The Examiner rejected claims 1, 2, 7, 14, 16, 18, 19, 21 and 23 under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) in view of Ellis 5,439,386; Liao 5,308,259; Haag 6,358,076 and Chow 3,680,034. It appears that Liao 5,308,259; Haag 6,358,076 and Chow 3,680,034 are now to be asserted against the claims instead of Israel 4,466,610, which was cited in the Final Office Action mailed May 21, 2004.

The Examiner continues to minimize the claimed invention by asserting that the only difference between the alleged prior art and the claimed invention is that the alleged prior art does not disclose the joining cavity engaging the outer threaded surface of the cable connection sleeve after a majority of the electrical coupling cavity is telescopically inserted in the cable connection sleeve. As the Examiner is aware after a reading of the state of the prior art in the Background of the Invention, and after reviewing the prior art patents in the multiple prior art searches, the state of the art for connecting welding cables was such that the insertion and removal of such cables from a welder was difficult and time consuming. The present invention developed a new cable connector for use in the welding industry to solve this problem. It is noteworthy that other than the APA, the Examiner has not cited any prior art that is directed to welder cable connectors. This fact, in and of itself, is deemed significant by Applicant as supporting its position throughout the prosecution of

this application that the claimed welder cable connector is novel and not obvious in view of the cited prior art.

A. Nonanalogous Cited Art

Prior to Applicant analyzing the deficiencies of the cited references, Applicant submits that Ellis, Liao, Haag, and Chow are nonanalogous art to the welder cable coupler defined in the pending claims. Ellis is directed to a sealed quick disconnect RF coupler for use with hardline coaxial cable. Ellis has nothing to do with welding, much less couplers for welders. As such, Ellis '386 is not in Applicant's field of endeavor. Ellis also would not be used by one skilled in the art of welding, charged with the task of improving the way in which cables are connected to welders or wire feeders for welders, to solve a connection problem associated with welding cables. The issues associated with coaxial cables are different from the issues associated with welding cables and the connection of welding cables to a welder or wire feeder.

Liao is directed to a microphone plug. Liao has nothing to do with welding, much less couplers for welders. As such, Liao is not in Applicant's field of endeavor. Liao also would not be used by one skilled in the art of welding, charged with the task of improving the way in which cables are connected to welders or wire feeders for welders, to solve a connection problem associated with welding cables. The issues associated with microphone plugs are different from the issues associated with welding cables and the connection of welding cables to a welder or wire feeder.

Haag is directed to a twist-lock connector for a wall outlet. The electrical plug includes a connector that is rotated a ¼ turn after the electrical plug is fully inserted in the wall outlet to lock the electrical plug in the wall outlet. Haag has nothing to do with welding, much less couplers for welders. As such, Haag is not in Applicant's field of endeavor. Haag also would not be used by one skilled in the art of welding, charged with the task of improving the way in which cables are

connected to welders or wire feeders for welders, to solve a connection problem associated with welding cables. The issues associated with wall outlets and electrical plugs are different from the issues associated with welding cables and the connection of welding cables to a welder or wire feeder.

Chow, like Ellis, is directed to a connector for a coaxial cable. For the same reasons set forth above with respect to Ellis, Chow is nonanalogous art.

In view of the fact that Elli, Liao, Haag and Chow are not analogous art, the rejection that is based on one or more of these references should be withdrawn.

B. Patentability of the Claims

The Examiner asserted that the APA disclosed all the limitations of claim 1 except that the joining cavity does not engage the outer threaded surface of the cable sleeve after a majority of the electrical coupling cavity is at least partially telescopically inserted in the cable connection sleeve. Applicant disagrees. The APA also does not disclose a gripping member on the coupling sleeve that included a plurality of nodes substantially symmetrically oriented on the coupling sleeve to form a generally star-shaped configuration.

As set forth above, Ellis is nonanalogous art, thus cannot be used to support a rejection of any of the pending claims. Furthermore, the teachings of Ellis in combination with the APA do not make obvious the limitations of pending claim 1. The connection configuration of Ellis is significantly different from the welder cable coupler disclosed in the APA and the present invention. Ellis does not disclose 1) a welder cable coupler on a welder housing or wire feeder for conveniently connecting a welder cable to a welding housing or wire feeder, 2) a welder coupler that has a coupling jacket which includes an electrical coupling cavity having a plurality of electrical connectors positioned therein, 3) a welder coupler having a plurality of electrical connectors

designed to be electrically connected to corresponding electrical connectors in a cable connection sleeve, 4) a joining cavity that is designed to at least partially engage an outer threaded surface of a cable connection sleeve after a majority of the electrical coupling cavity is at least partially telescopically inserted in the cable connection sleeve, 5) a coupling sleeve that includes a gripping member, and 6) a gripping member on the coupling sleeve that includes a plurality of nodes substantially symmetrically oriented on the coupling sleeve to form a generally star-shaped configuration.

Ellis is directed to an RF coupler that is used to connect a coaxial cable for transmission of an audio-visual signal. Ellis does not teach that the disclosed coupler can be successfully used in other applications. The RF coupler disclosed in Ellis is positioned on the coaxial cable, not the device being connected to the coaxial cable. This arrangement is opposite of the arrangement defined in the present invention. The welder cable coupler defined in claim 1 is located on a welder or wire feeder and is designed to be connected to a welding cable. The coupler or adaptor 8 disclosed in Ellis is secure to the coaxial cable and is designed to be threaded onto a chassis mounting portion 6. Ellis also does not disclose, teach, or suggest a welder coupler which includes a plurality of electrical connectors positioned therein. Ellis only discloses a single wire connection, since a coaxial cable only has a single wire that transmits a signal. Ellis further does not disclose, teach, or suggest a welder coupler having a joining cavity that is designed to at least partially engage an outer threaded surface of a cable connection sleeve after a majority of the electrical coupling cavity is at least partially telescopically inserted in the cable connection sleeve. The joining cavity of Ellis is on the coaxial cable, not the chassis mounting portion 6. In addition, Ellis does not disclose, teach, or suggest a joining cavity that is designed to at least partially engage an outer threaded surface of a cable connection sleeve after a majority of the electrical coupling cavity is at

least partially telescopically inserted in the cable connection sleeve. The Examiner side stepped this deficiency of Ellis by asserting that it would have been obvious to one skilled in the art to increase the longitudinal sliding play distance of coupling sleeve 120 of the APA in view of Ellis. There is no support for such teaching other than Applicant's own disclosure. Ellis also does not disclose, teach, or suggest a coupling sleeve that includes a gripping member having a plurality of nodes substantially symmetrically oriented on the coupling sleeve that forms a generally star-shaped configuration. The coupler or adaptor 8 is not disclosed as including any type of gripping element.

In view of the different configuration of the coupler disclosed in Ellis, Ellis does not include most, if any, of the limitations of pending claim 1. As such, there are no teachings in Ellis that would motivate one skilled in the art to take selected teachings from Ellis relating to a different type and configured coupler and combine such selected teachings with the APA to make obvious the welder cable coupler defined in pending claim 1. The Examiner's assertions that it would be obvious to modify Ellis and to use such modification in combination with the APA to support an obviousness rejection of claim 1 is not supported by any of the references of record. Applicant submits that the Examiner's reasoning appears to be based in part on hindsight reconstruction of Applicant's invention.

The Examiner referenced the APA, Liao, Haag and Chow to illustrate various gripping structures. As set forth above, Liao, Haag and Chow are nonanalogous art. In addition, none of these references disclose, teach, or suggest a gripping member on the coupling sleeve having a plurality of nodes substantially symmetrically oriented on the coupling sleeve to form a generally star-shape configuration. The Examiner merely asserted that it would be obvious to form a coupling sleeve having the claimed node configuration. The Examiner's reasoning again appears to be based in part on hindsight reconstruction of Applicant's invention.

For at least the reasons set forth above, the pending claims are not obvious in view of the APA, Ellis, Liao, Haag and/or Chow.

The Examiner also asserted that the APA discloses the limitations of claims 2, 14, 16, 18, 19 and 23. Applicant disagrees. Claim 16 includes the limitation that the coupling sleeve is movable along a longitudinal axis of the coupling jacket a length of at least a thread width of the joining cavity. The APA does not disclose, teach or suggest such movement of the coupling sleeve. Although Figure 2 arguably discloses that the coupling sleeve has room to slightly move along a longitudinal axis of the coupling jacket, the small play is merely meant to enable the coupling sleeve to rotate, not move along a longitudinal axis of the coupling jacket. Claims 18 and 19 include the limitation that the mounting plate includes an anti-rotation member that engages the coupling jacket when the coupling jacket is at least partially positioned in the plate cavity so as to inhibit movement of the coupling jacket in the plate cavity. As described in the Background of the Invention and as illustrated in Figure 2, the APA does not disclose, teach, or suggest such an anti-rotation member. Indeed, the present invention is in part directed to a coupler that addresses the prior art problem of the coupling jacket moving in the plate cavity.

The Examiner also asserted that the limitation in claim 7 is disclosed in Ellis. The coupling sleeve defined in claim 7 is located on the opposite component from the one disclosed in Ellis as set forth above. As such, Ellis does not disclose the limitation of claim 7.

II. THE SECOND REJECTION

The Examiner rejected claims 8-10 under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) in view of Ellis, Liao, Haag, Chow and Herrmann. Applicant contends that Herrmann '759 is nonanalogous art, thus cannot be used to support a rejection of claims 8-10.

Herrmann has nothing to do with welding or couplers used to connect a welding cable to a

welder or wire feeder. As such, Herrmann is not in Applicant's field of endeavor. In addition, Herrmann would not be used by one skilled in the art of welding, charged with the task of improving the way in which cables are connected to welders or wire feeders for welders, to find a solution to a welding cable issue. The issues associated with miniature high voltage connectors are different from the issues associated with welding. The connections associated with welding cables are not miniature connections or high voltage connections. The welding cable is design to transmit large currents and voltages that are typically less than 120 V. The special issues associated with small high voltage connections do not exist for welder cable couplers. Indeed, the problems associated with welding cables that were addressed by Applicant in the pending claims have nothing to do with the problems associated with high voltage connectors, minimizing the size of the high voltage connectors and/or preventing the decimation of an O-ring and subsequent connector failure that are addressed in Herrmann.

III. THE THIRD REJECTION

The Examiner rejected claims 11-13, 15, 17, 20 and 23-64 under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) in view of Ellis, Liao, Haag, Chow, Herrmann and Glover. Applicant contends that Glover is nonanalogous art for similar reasons as set forth above with respect to Herrmann, thus cannot be used to support a rejection of any of these claims.

As to the substance of the Examiner's rejection of claims 11-13, these claims include the limitation that at least a majority of the electrical coupling cavity extends outwardly from the receiving end of the joining cavity. The coupler configuration defined in claims 11-13 is a marked departure from prior welder cable coupler configurations as illustrated in Figures 1-3 of the APA. As to the teachings of Glover, Glover does not disclose the length of the connection cavity, thus it is not clear from Glover whether at least a majority of a connection cavity extends outwardly from

the receiving end of the joining cavity. This concept is not described in Glover, thus no details concerning the length of the connection cavity and the position of the joining cavity can be gleaned from the disclosure of Glover. As such, the combination of the APA, Ellis, Liao, Haag, Chow, Herrmann and Glover does not make obvious the limitation of claims 11-13.

Claim 17 includes the limitation concerning the amount of longitudinal movement of the coupling sleeve. Glover is absent any teachings with respect to this limitation, thus claim 17 is not obvious over the cited art of record for at least the reasons set forth above with respect to claim 16.

Claim 20 includes the limitation concerning an anti-rotation member that engages the coupling jacket. Glover is absent any teachings with respect to this limitation, thus claim 20 is not obvious over the cited art of record for at least the reasons set forth above with respect to claim 19.

With regard to claims 23-43 which ultimately depend on independent claim 21, these claims include many of the same limitations as discussed above with respect to claims 2-20. Applicant submits that claims 23-24 are not obvious in view of the prior art for at least the reasons set forth above with respect to such corresponding or similar claims.

Finally, the Examiner rejected claims 44-64 on the same basis as claims 1-21. Claims 44-64 are method claims directed to a novel method of connecting a welding cable to a welder. As stated above, much of the art relied upon to support a rejection of claims 44-64 is nonanalogous art, this cannot be used to properly support a rejection of these claims. In addition, the combination of the cited art does not disclose, teach or suggest a method of conveniently connecting a welder cable to a welding housing or wire feeder that includes the steps of 1) providing a coupler secured in a plate cavity of a mounting plate, which coupler has a coupling jacket that includes a plurality of connectors, at least one of which is an electrical connector, that are at least partially positioned therein, and a coupling sleeve rotatably positioned at least partially about the coupling jacket wherein

the coupling sleeve includes a joining cavity having a connection member, 2) inserting the cable connection sleeve about the coupling jacket until a plurality of connectors of the cable connection sleeve are at least partially connected to a plurality of connectors of the coupling jacket, 3) moving the coupling sleeve axially along a longitudinal axis of the coupling jacket a length of at least a portion of the connection member until the joining cavity in the coupling sleeve at least partially telescopically receives the cable connection sleeve and the connection member of the cable connection sleeve and the joining cavity are at least partially engaged, and 4) rotating the coupling sleeve at least one full turn until the connection member of the cable connection sleeve and the joining cavity are at least partially secured together.

This method of connecting the welder cable to a welder is not disclosed or taught by any combination of the prior art references. Applicant submits that for at least this reason, claim 44 and all the claims dependent therefrom are not obvious in view of the cited art of record. Several of the claims that ultimately depend on claim 44 also include patentably distinct features. With regard to claims 45-64, Applicant submits that such claims are not obvious in view of the prior art for at least the reasons set forth above with respect to such corresponding or similar claims.

Applicant submits the claims presently pending in the above-identified patent application are in condition for allowance and a notice to that effect is earnestly solicited.

Respectfully submitted,
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